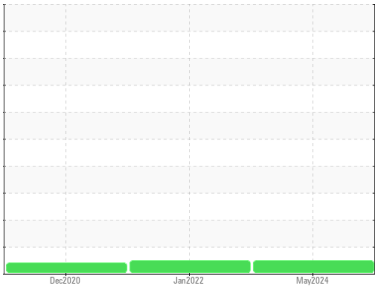
KAESER COMPRESSORS
Built for a lifetime.

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## KAESER 4522424 (S/N 1151)
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) M-460 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **KCPA016048** | KCP39604 | KCP34453 |
| Sample Date | | Client Info | | **10 May 2024** | 05 Jan 2022 | 10 Dec 2020 |
| Machine Age | hrs | Client Info | | **3362** | 2518 | 2369 |
| Oil Age | hrs | Client Info | | **844** | 146 | 582 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | ATTENTION |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **0** | <1 | <1 |
| Chromium | ppm | ASTM D5185m | >10 | **<1** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | **3** | <1 | 0 |
| Lead | ppm | ASTM D5185m | >10 | **<1** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >50 | **1** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >10 | **<1** | 0 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | 90 | **0** | 0 | 9 |
| Molybdenum | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 100 | **58** | 74 | 79 |
| Calcium | ppm | ASTM D5185m | 0 | **0** | <1 | <1 |
| Phosphorus | ppm | ASTM D5185m | 0 | **0** | 1 | 7 |
| Zinc | ppm | ASTM D5185m | 0 | **4** | 2 | 0 |
| Sulfur | ppm | ASTM D5185m | 23500 | **22398** | 18531 | 17926 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **0** | <1 | 0 |
| Sodium | ppm | ASTM D5185m | | **11** | 14 | 12 |
| Potassium | ppm | ASTM D5185m | >20 | **3** | 0 | <1 |
| Water | % | ASTM D6304 | >0.05 | **0.018** | 0.019 | 0.021 |
| ppm Water | ppm | ASTM D6304 | >500 | **188** | 190.6 | 219.5 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **2875** | 5107 | 4729 |
| Particles >6µm | | ASTM D7647 | >1300 | **443** | 932 | 1405 |
| Particles >14µm | | ASTM D7647 | >80 | **29** | 68 | 66 |
| Particles >21µm | | ASTM D7647 | >20 | **10** | 19 | 12 |
| Particles >38µm | | ASTM D7647 | >4 | **2** | 0 | 3 |
| Particles >71µm | | ASTM D7647 | >3 | **2** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | **19/16/12** | 17/13 | 18/13 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.0 | **0.40** | 0.330 | 0.340 |

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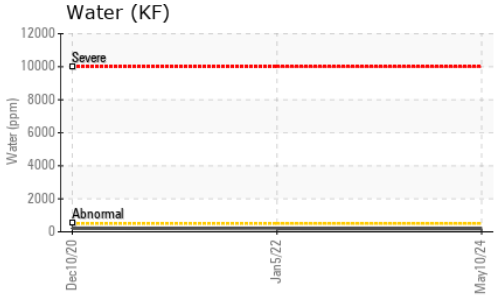
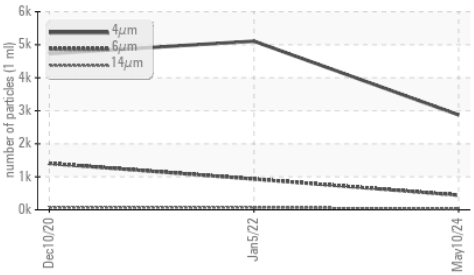
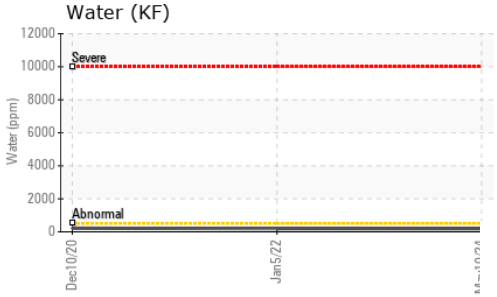
Water (KF)



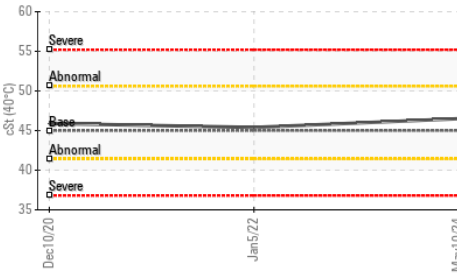

Particle Trend



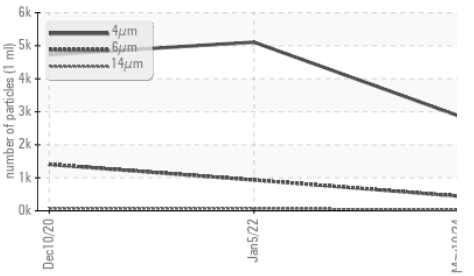

Water (KF)




Viscosity @ 40°C

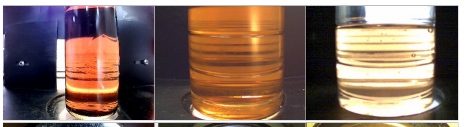
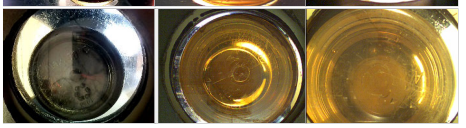



Particle Trend



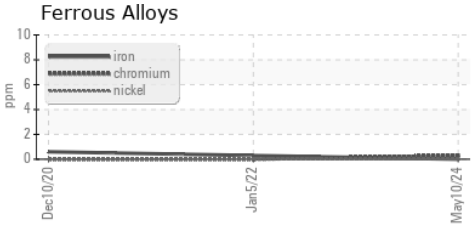

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.05 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 45 | **46.5** | 45.4 | 45.9 |

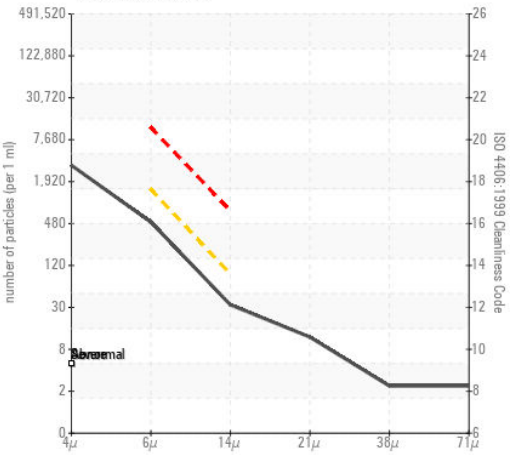
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

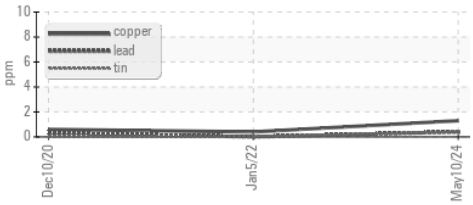
Ferrous Alloys



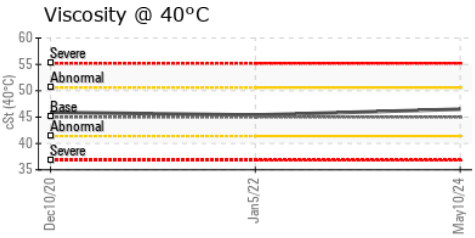

Particle Count



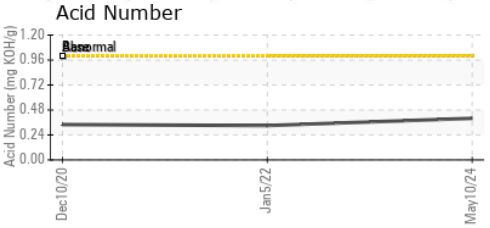

Non-ferrous Metals




Viscosity @ 40°C




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KCPA016048
**Lab Number** : 06199149
**Unique Number** : 11061272
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**Received** : 04 Jun 2024
**Tested** : 05 Jun 2024
**Diagnosed** : 06 Jun 2024 - Don Baldridge

**LITHGOWS AUTOMOTIVE**
20055 75TH AVE N
CORCORAN, MN
US 55340
Contact: Service Manager

*To discuss this sample report, contact Customer Service at 1-800-237-1369.*
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
*Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)*

T:
F: